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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,674	03/21/2002	Masao Akiyoshi	401612	4820

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EXAMINER

MAYO III, WILLIAM H

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,674

Applicant(s)

AKIYOSHI ET AL.

Examiner

William H. Mayo III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings were received on October 27, 2003. These drawings are approved.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimojima et al (Pat Num 6,362,447, herein referred to as Shimojima) in view of Applicant's Own Admission of Prior Art (herein referred to as AOAPA). Shimojima

discloses an electrode for wire (Figs 1-2) electrical discharge machining (abstract). Specifically, with respect to claim 1, Shimojima discloses an electrode for wire (3) comprising an electrically conductive core (1), a first coating of Cu-Zn intermetallic compound free of an alpha phase surrounding the core (1, Col 2, lines 43-46). With respect to claim 2, Shimojima discloses an electrode for wire (3) has a first coating comprising Cu-Zn in a beta phase (Col 2, lines 43-46). With respect to claims 3-4, Shimojima disclose the core wire (1) comprises Cu-Zr alloy (Col 2, lines 43-46). With respect to claims 5-6, Shimojima disclose the core wire (1) comprises Cu-Zn alloy (Col 6, lines 30-35).

However, Shimojima doesn't necessarily disclose the wire having a second layer in an alpha phase wherein the second coating layer has a thickness of $5\text{-}15\mu$ (claim 1).

AOAPA teaches, under the heading "Background Art", a known electrode wire (Fig 8) that has an innermost layer and an outermost layer consisting of only an alpha phase wherein the alpha phase guarantees superior workability and produces a wire without any cracks or breaks during a cold wire drawing (Fig 8, Pages 1-2, lines 10-27 & 1-5, respectively). Specifically, with respect to claim 1, AOAPA teaches an electrode wire (Fig 8) having a dual layer (Fig 8), wherein the outermost layer (Fig 8) has an alpha phase and a thickness of $15\mu\text{m}$ (Fig 8, Pages 1-2, lines 10-27 & 1-5, respectively).

With respect to claim 1, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the wire electrode of Shimojima to comprise the additional layer configuration as taught by AOAPA because AOAPA teaches that such a configuration provides an electrode wire (Figs 1-2) with an

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alpha phase wherein the alpha phase guarantees superior workability and produces a wire without any cracks or breaks during a cold wire drawing (Fig 8, Pages 1-2, lines 10-27 & 1-5, respectively).

Response to Arguments

5. Applicant's arguments filed June 24, 2003 have been fully considered but they are not persuasive. The applicant argues the following:

- A) Shimojima doesn't disclose or suggest the Cu-Zn coating being absent an alpha phase.
- B) There is no suggestion to combine the wire of Shimojima with the wire described in the Prior Art of applicant's invention.
- C) Shimojima actually teaches against and excludes including an outer coating of the beta phase of the alloy.

With respect to arguments A & C, the examiner respectfully traverses. While the applicant is convinced that Shimojima doesn't necessarily disclose the CU-Zn alloy coating being solely beta phase, the examiner respectfully disagrees. Shimojima clearly teaches that the Cu-Zn alloy coating may be solely a beta phase. Specifically, in Column 4, lines 54-57, Shimojima clearly discloses

"The Cu-Zn alloy is manufactured by an ordinary extrusion process, that is formed of mixing composition of alpha phases and beta phases or a single phase composition of only beta phase."

Therefore, Shimojima clearly teaches that the Cu-Zn alloy may be a single phase composition of only beta phase.

With respect to argument B, the examiner respectfully traverses. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Shimojima and the prior art wire both disclose electrical electrode wires for discharge machining apparatus (see Col 1, lines 5-8 and Pages 1-2 of applicant's specification). Both Shimojima and the prior wires are concerned with workability and breakage of the wires (see Column 1, lines 50-65 of Shimojima and Fig 8, Pages 1-2, lines 10-27 & 1-5, respectively of applicant's specification). Specifically, Shimojima teaches that it is an object of the invention to overcome the aforementioned problems (workability and breakage of the wire) of the cited prior art (Col 2, lines 5-10). While Shimojima clearly teaches utilizing only one insulating layer, AOAPA teaches that having an outer dual layer having an alpha phase material in the outermost layer provides an electrode wire (Figs 1-2) that guarantees superior workability and produces a wire without any cracks or breaks during a cold wire drawing (Fig 8, Pages 1-2, lines 10-27 & 1-5, respectively). Therefore, there clearly exist a motivation for modifying the wire of Shimojima to comprise a dual layer, as AOAPA clearly teaches that having an dual layer guarantees superior workability and produces a wire without any cracks or breaks during cold wire drawing which is the same objective as taught by Shimojima. Clearly, there also exist a reasonable amount

of success for modifying Shimojima to comprise a dual layer, as Shimojima and AOAPA teach electrode wires for usage in the environment to achieve the same results. Thirdly, all of the claimed limitations are taught by modified Shimojima. Therefore, a proper prima facie case of obviousness has been established and thus the combination of Shimojima and AOAPA is proper and just.

In light of the above comments, the examiner respectfully submits that the 35 USC 103(a) rejection is proper and just.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


WHM III
December 28, 2003